

Do Black Holes Really Exist?

Do black holes really exist or is it all just imagination. “Black Holes”...that word is a mystery to all astronomers in the world. How do we know they exist? And if they do...how do we prove that they really do? Black holes form when a star that burns out of fuel starts to collapse on its own mass for a period of time. Once this process is over, the star has squeezed all its mass into one point. This one point is called a *singularity*. People might not believe it but at this point both time and space stop. Black holes have been known to pull stars and other heavenly bodies into its center by its gravity. There is a limit to where nothing can escape and where nothing can get away. This invisible circle around a black hole is called the *event horizon*. Anything that goes past the event horizon will no doubt get sucked into the black hole. Anything beyond the event horizon will not get sucked in, but will orbit the black hole.

My project centered around black holes and whether they could exist. My research concluded that very large galaxies such as NGC 3379 must contain a black hole because the stars orbiting its center are moving faster than they should and they have shifted their spectral lines to the red. The only conclusion would be that a very massive object is causing this. The only known object in the universe that would cause this would be a black hole.